

Remarks

Favorable reconsideration is respectfully requested in light of the above amendments and the following comments. The claims have been amended to more particularly describe the invention, as well as to resolve the Examiner's objection pertaining to new matter. No new matter has been added as a result of these amendments.

Prior to addressing the prior art rejections, Applicants wish to generally discuss the invention. The claimed invention is directed to devices for (and methods of) manufacturing stents employing a unique and patentable configuration not previously available. As will be discussed with respect to the prior art rejections, none of the cited references describe or suggest the claimed invention. Moreover, the Examiner's repeated reliance on a plurality of case law citations to assert the obviousness of what cannot be found in the art is simply not correct or appropriate.

Applicants respectfully traverse the Examiner's rejection of claims 1-4, 6-8, 11-16, 18-19, 21-23 and 25-27 under 35 U.S.C. §103(a) as unpatentable over Acciai et al., U.S. Patent No. 5,855,802, in view of Pacetti et al., U.S. Patent No. 6,695,920. Applicants respectfully assert that a proper *prima facie* obviousness rejection has not been established.

The Examiner asserts that Acciai et al. disclose "a method and apparatus for forming a tubular article having a perforated annular wall, such as a surgical stent." However, it is noted that the claimed invention is directed to forming stents via laser cutting. While Acciai et al. do employ a laser, it is as a light source for photo etching. Acciai et al. do not disclose or suggest forming stents via laser cutting.

The Examiner asserts that Pacetti et al. disclose particular aspects of a mandrel apparatus for supporting a stent. However, it is noted once again that the claimed invention is directed to forming stents via laser cutting. Pacetti et al. do not even disclose a laser and thus cannot be considered as remedying the noted shortcomings of Acciai et al., i.e., by disclosing a laser cutting system. The cited combination cannot be considered as disclosing or suggesting each and every claimed feature, and for at least this reason the *prima facie* obviousness rejection is flawed and should be withdrawn.

Turning now to independent claim 1, the claim reads:

1. (currently amended) A device for manufacturing an intravascular stent, comprising:
a base having a first surface and a second surface;
a laser cutting system attached to the first surface of the base;
a linear motor attached to the second surface of the base;
a rotary motor coupled to the linear motor; and
a workpiece coupled to the rotary motor, the workpiece positioned below the linear motor;
a pre-cut guide coupled to the workpiece; and
a post-cut guide coupled to the workpiece.

As can be seen, claim 1 requires a pre-cut guide that is coupled to the workpiece as well as a post-cut guide that is coupled to the workpiece. Neither reference describes this. Instead, Acciai et al. appear to disclose mounting the tube into a rotating mandrel. Pacetti et al. appear to disclose a mandrel that includes a body that extends into the stent. Thus, neither reference describe a distinct pre-cut guide that is coupled to the workpiece as well as a post-cut guide that is coupled to the workpiece. As described in the specification and as will be understood by one of skill in the art, the pre-cut guide and the post-cut guide are coupled to the workpiece such that the laser cuts the workpiece at a location that is between the pre-cut guide and the post-cut guide.

With respect to independent claim 13, the claim reads:

13. (previously presented) A device for cutting a stent from a tube, comprising:
a base member having a top surface and a bottom surface;
a first motor having a top surface and a bottom surface, the bottom surface of the first motor being attached to the bottom surface of the base member, such that the first motor is attached upside-down to the base member;
a laser cutting device attached to the top surface of the base member;
a rotary motor attached to the first motor; and
a tubular workpiece connected to the rotary motor;
wherein the tubular workpiece is positioned below the first motor.

As can be seen, the claimed invention is directed to a device for cutting a stent from a tube using a laser cutting device. As discussed above, neither Acciai et al. nor Pacetti et al. describe or suggest a device for cutting a stent using a laser cutting device.

As argued extensively in previous Responses, neither Acciai et al. nor Pacetti et al. describe or suggest the claimed structural arrangement between the claimed structural components, despite the Examiner's reliance on case law to assert obviousness.

Turning now to independent claim 23, the claim reads:

23. (previously presented) A method for manufacturing an intravascular stent, comprising the steps of:
providing a stent cutting device, the stent cutting device including a base, a laser cutting device attached to the base, a linear motor attached to the base, and a rotary motor coupled to the linear motor;
providing a tubular workpiece;
attaching the workpiece to the stent cutting device, the workpiece positioned below the linear motor; and
transmitting laser energy from the laser cutting device to the tubular workpiece so as to cut the workpiece with the laser energy.

Claim 23 is a method claim that recites method steps. One of the method steps recited in claim 23 is transmitting laser energy from the laser cutting device to the tubular workpiece in order to cut the workpiece with the laser energy. Neither reference can reasonably be considered as disclosing or suggesting this claimed method step. As noted above, Acciai et al. include a laser, but only use it as a light source for photo etching. Acciai et al., therefore, cannot be considered as describing or suggesting a method step of cutting the tubular workpiece with laser energy. As referenced above, Pacetti et al. do not even disclose a laser.

Independent claim 25 reads:

25. (previously presented) A device for manufacturing an intravascular stent, comprising:
a common base;
a laser attached to the common base;
one or more motors attached to the common base, wherein at least one of the one or more motors is up-side down; and
a tubular workpiece coupled to the one or more motors;
wherein the tubular workpiece is positioned below the one or more motors.

Claim 25 is directed to a device for manufacturing an intravascular stent. Claim 25 requires that the tubular workpiece be positioned below the one or more motors. As discussed in previous Responses, neither reference describes or suggests this claimed

feature. Moreover, neither reference appears to describe or suggest that at least one of the motors be up-side down.

In Acciai et al., the workpiece appears to be axially aligned with the motor, and thus cannot be considered as being positioned below the one or more motors. In Pacetti et al., it appears that the workpiece is axially aligned with the rotary motor and is actually above the linear motor. Neither reference, either separately or in combination, suggest the claimed invention, despite the Examiner's continued reliance upon case law to suggest obviousness.

Independent claim 27 reads:

27. (previously presented) A device for manufacturing an intravascular stent, comprising:
a common base, the common base having a top surface and a bottom surface;
a laser attached to the top surface of the common base;
a first motor attached to the bottom surface of the common base, the first motor being disposed in an up-side down configuration;
a second motor attached to the first motor; and
a tubular workpiece coupled to either the first motor or the second motor;
wherein the tubular workpiece is positioned below the bottom surface of the common base.

Independent claim 27 is directed to a device for manufacturing an intravascular stent. As argued in previous Responses, claim 27 recites structural arrangements between structural elements that are simply not shown by the cited references. The claimed invention requires, among other features, that the laser be attached to the top surface of the base while the first motor is attached to the bottom surface of the base. A second motor is attached to the first motor. A tubular workpiece is coupled to one of the motors such that the workpiece is disposed below the bottom surface of the base. Neither reference describes or suggests these claimed limitations. Favorable reconsideration is respectfully requested.

Applicants respectfully traverse the Examiner's rejection of claims 5, 9, 17, 20 and 24 under 35 U.S.C. §103(a) as unpatentable over Acciai et al., U.S. Patent No. 5,855,802, in view of Pacetti et al., U.S. Patent No. 6,695,920, and further in view of Tessier et al., U.S. Patent No. 5,073,694. Independent claims 1, 13 and 23, from which

claims 5, 9, 17, 20 and 24, respectively, depend, have been distinguished above as being patentable over Acciai et al. and Pacetti et al. Tessier et al. are not believed to remedy the noted shortcomings of Acciai et al. and Pacetti et al. with respect to the independent claims.

Tessier et al. appear to describe a laser cutting apparatus, but do not appear to describe or suggest a laser cutting apparatus that one of skill in the art would interpret as being applicable or suitable for making high precision structures such as laser-cut stents. Moreover, as Acciai et al. teach photo etching to form a stent, and Pacetti et al. are directed to coating stents, Applicants are not confident that these three references are properly combinable, or that one of skill in the art would be motivated to even combine the teachings of these disparate references. Thus, Independent claims 1, 13 and 23 are believed to be patentable over all three references.

Claims 5, 9, 17, 20 and 24 include the elements of claims 1, 13 and 23, respectively, and thus are patentable for at least the same reasons. With particular respect to claims 9 and 20, Tessier et al. are not believed to describe or suggest a laser/water jet hybrid. As will be appreciated by one of skill in the art, a laser/water jet hybrid is a laser system in which the laser beam is coaxial with a water jet. Simply pumping a fluid through the device being cut neither describes nor suggests a laser/water jet hybrid. Favorable reconsideration is respectfully requested.

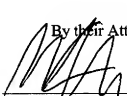
Reexamination and reconsideration are requested. It is respectfully submitted that all pending claims are now in condition for allowance. Issuance of a Notice of Allowance in due course is also respectfully requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

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By their Attorney,

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